

## **REMARKS/ARGUMENTS**

### **Status and Request for Reconsideration**

Reconsideration of this application is requested. The claims presented for reconsideration are claims 1-5 and 9-31, as amended. Claims 6-8 have been cancelled without prejudice. Claim 1 has been amended to affirmatively recite that (i) the air is separated into one or more of its components, (ii) the oxygen-containing regeneration medium comprises an oxygen stream containing at least about 95 wt% oxygen, and (iii) the nitrogen-containing stream contains at least about 95 wt% nitrogen. Exemplary support for these amendments can be found in the originally-filed specification, *e.g.*, at paragraph [0047]. Claim 1 has been further amended to recite that at least a portion of at least one of the oxygen stream and the nitrogen-containing stream is directed to a portion of the reaction system other than the regenerator. Exemplary support for this amendment can be found in the variety of embodiments in the originally-filed specification, *e.g.*, at paragraphs [0157]-[0218]. No new matter has been added by this amendment.

### **Claim Rejections - 35 U.S.C. § 103**

Claims 1-31 were rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,541,415 to Vaughn *et al.* (hereinafter “Vaughn”), in view of U.S. Patent No. 5,457,077 to Williamson *et al.* (hereinafter “Williamson”). The Examiner indicated that Vaughn discloses a process for regenerating a catalyst comprising contacting the catalyst with an oxygenate to form an olefin comprising ethylene and/or propylene, sending the coked catalyst to a regenerator for oxidation in an oxygen atmosphere, and re-circulation. The Examiner acknowledges that Vaughn is deficient in disclosing air separation into an oxygen-containing stream and a nitrogen-containing stream. The Examiner further indicates that Williamson discloses separating air into an oxygen-containing stream and a nitrogen-containing stream in a process for regenerating catalyst. Applicants respectfully traverse the rejection for the following reasons.

Applicants’ have clarified in amended claim 1 that the separated oxygen-containing and nitrogen-containing streams contain at least about 95 wt% of their respective gases (as defined in paragraph [0047] of the instant application). Applicants have also clarified in amended claim 1

that at least a portion of at least one of the oxygen stream and the nitrogen-containing stream is directed to a portion of the reaction system other than the regenerator. The combination of these two clarifications should demonstrate the novelty and non-obviousness of the instant claims over the cited prior art of record, as the prior art of record is devoid of disclosure or suggestion of such a claim element, as further described herein.

The Examiner seems to have misinterpreted Applicants comments regarding Williamson and Vaughn both teaching the use of separated/un-separated air for regeneration purposes only. The Examiner, on pages 6-7 of the Office Action, first argues that Williamson's disclosure of use in the regeneration zone (Williamson at column 12, lines 30-33) is somehow different that Vaughn's disclosure of air contact "[t]o add strength to the catalyst" (Vaughn at column 10, lines 49-60). Indeed, reading Vaughn carefully, Applicants respectfully submit that both contexts involve regenerating the catalyst particles. To the extent that the Examiner disagrees with Applicants' reading of these references, Applicants respectfully request clarification of, and support for, the Examiner's position that uses other than in the regeneration context would have been obvious.

Also on pages 6-7 of the Office Action, the Examiner further dismisses Applicants' prior arguments as pointing out the differences between the two cited references. On the contrary, Applicants respectfully submit that the use of separated/un-separated air in both references is for regeneration purposes only. This is not a difference between the references, but a commonality. However, several of Applicants' claims require a different use for certain separated and un-separated air streams. Neither reference, nor even their combination, teaches or suggests the use of separated air streams in any other portion of any process, no less in any oxygenates-to-olefins process, as recited in claims 9-10. This same argument applies to claim 11 (use of nitrogen-containing stream to regenerate the poison-containing molecular sieve particle), which rejection is, incidentally, also deficient in that the teaching of polyolefin polymerization also does not render obvious the presence of a polymerization catalyst poison nor a method of dealing with its presence. This same argument further applies at least to claim 21 (step a; use of oxygen-containing stream to convert the natural gas to syngas), claim 23 (step b; use of the nitrogen-containing stream to regenerate the water-containing molecular sieve particle), claim 24 (step b;

using the nitrogen-containing stream to remove volatile compounds from the polymer), claims 25-26 (step b; using the nitrogen-containing stream for blanketing the polymer), and claims 27-28 (using the nitrogen-containing stream to derime any portion of an apparatus).

Applicants respectfully submit that the Examiner has not shown how the combination of Vaughn and Williamson, already deficient with respect to the sole pending independent claim, as noted above, would have motivated one of ordinary skill in the art to further use a compressed air stream (*e.g.*, pre-separation) to operate a valve actuator (claims 14-20), to further fluidize and transport at least a portion of the molecular sieve catalyst composition (claim 29), for further blanketing at least a portion of the molecular sieve catalyst composition in the catalyst storage unit (claim 30), or in an aerobic water treatment system for further removing contaminants from a water-containing effluent stream (claim 31). Applicants can find no disclosure or suggestion in the cited prior art of record to use a compressed air stream for any of the aforementioned purposes, whether the cited prior art generally discloses that these purposes exist or not. Applicants respectfully draw the Examiner's attention to the former, although the Examiner has limited his assertions in previous Office Actions to the latter.

In addition, claim 2 recites that the separation of air comprises a cryogenic step, such that the air separation unit comprises a cryogenic air separation unit. Vaughn does not teach or suggest air separation at all, and Williamson does not disclose or suggest cryogenic air separation, instead disclosing only membrane separation systems that operate at elevated temperatures. Indeed, U.S. Patent No. 4,787,919, which Williamson incorporates by reference at column 12, line 20, teaches superheating of compressed air for membrane air separation systems. (Applicants note that the other patent which Williamson incorporates by reference for membrane air separation systems, *i.e.*, U.S. Patent No. 3,830,733, at column 12, line 25, does not disclose any separation temperature and only discloses details of fabricating polymeric gas separation membranes). Without being bound by theory, Applicants respectfully submit that cryogenically separated air can have significant advantages over air separated by other, higher-temperature means. For example, as noted in paragraph [0145] of the instant application, a particularly cold regeneration medium, such as one obtained through cryogenic air separation, can advantageously maintain the regenerator temperature in a desired range and/or can advantageously reduce the

duty on any catalyst coolers attached to the regenerator. Therefore, Applicants respectfully submit that at least claim 2 should be allowable over the cited prior art.

Regarding Applicants' remarks and arguments to the statements in current and prior Office Actions, Applicants acknowledge the renewed flexibility of obviousness analyses under the recent U.S. Supreme Court decision of *KSR International Co. v. Teleflex Inc.*, No. 04-1350 (U.S. 4/30/07). However, Applicants respectfully submit that the Examiner is still required to explicitly identify: (a) the origin (whether from cited prior art or from the level of one of ordinary skill in the art) for all the elements of a rejected claim; and (b) **"the reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed."** See, e.g., USPTO Memorandum, dated May 3, 2007, from Margaret A. Focarino to Technology Center Directors, page 2 (emphasis in original).

For any one or more of the foregoing reasons, Applicants respectfully submit that the obviousness rejection of claims 1-5 and 9-31, as amended cannot be maintained and respectfully request its reconsideration and withdrawal.

### **CONCLUSION**

Having demonstrated that the cited references fail to disclose or suggest the invention as presented herein, and all other formal issues having now been fully addressed, this application is believed to be in condition for allowance. Accordingly, Applicants request early and favorable reconsideration in the form of a Notice of Allowance.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated, since this should expedite the prosecution of the application for all concerned.

Please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1712 (Docket #: 2004B025).

Respectfully submitted,

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